

CLAIMS

1. An instrument for applying a predetermined amount of fluid material to a surface comprising:

a fluid insert for housing fluid material having a first end and a second end, and a protruding ridge arranged on an exterior of said fluid insert between said first end and said second end;

an outer casing having a hollow interior for receiving said fluid insert therein, said outer casing having a first end and a second end, and a pump actuating surface, said outer casing further including an applicator tip integrally formed with said outer casing at said first end for dispensing fluid material from said outer casing, and an interior ridge arranged within said hollow interior between said first end and said second end for securing said fluid insert within said outer casing when said protruding ridge of said fluid insert is positioned between said interior ridge of said outer casing and said first end of said outer casing;

a pump arranged at said first end of said fluid insert having a pump body and a pump tip; and

said fluid insert constructed and arranged to be movable within said outer casing between a stationary position and an actuated position, said pump being in an extended position when said fluid insert is in said stationary position, and said pump being in a retracted position within said pump body as a result of said pump tip being in engagement with said pump actuating surface of said outer casing when said fluid insert is in said actuated position, and said pump being operative to dispense a predetermined amount of fluid material as said

fluid insert is moved from said stationary position to said actuated position within said outer casing.

2. An instrument according to claim 1, wherein said outer casing further comprises a tab arranged within said hollow interior of said outer casing between said first end and said second end, and said fluid insert further comprises a notch arranged between said first end of said fluid insert and said second end of said fluid insert, said tab of said outer casing constructed and arranged to fit within said notch on said fluid insert so as to guide movement of said fluid insert when said fluid insert moves in said outer casing from said stationary position to said actuated position.

3. An instrument according to claim 1, wherein said interior ridge on said outer casing comprises a first interior ridge, and wherein said outer casing further comprises a second interior ridge arranged between said interior ridge and said first end of said outer casing; and a pumping region in said outer casing defined by the area between said first and second interior ridges, said pumping region constructed and arranged to permit movement of said fluid insert within said pumping region.

4. An instrument according to claim 1, further comprising a seal plug having a seal plug ridge for sealing said second end of said fluid insert; and said fluid insert further comprising an interior chamber, a first ridge and a second ridge located within said interior chamber displaced from said second end, and wherein said seal plug ridge of said seal plug is secured between said first and second ridges of said fluid insert when said seal plug is assembled within said fluid insert.

5. An instrument according to claim 4, wherein said instrument further comprises a movable diaphragm for pushing fluid material toward said pump in said fluid insert, and said seal plug further having a diaphragm holder for holding said diaphragm.

6. An instrument according to claim 1, further comprising a dispenser cap, said dispenser cap being constructed and arranged to be assembled over said applicator so as to prevent contamination of fluid material.

7. An instrument according to claim 6, wherein said applicator further comprises an applicator opening; and said dispenser cap further comprises a declogger, said declogger constructed and arranged to fit within said applicator opening so as to prevent the build-up of dried fluid material.

8. An instrument according to claim 1, wherein said applicator is a brush.

9. An instrument according to claim 1, wherein said applicator is a scrubbing pad.

10. An instrument according to claim 1, wherein said outer casing has a grip for holding said outer casing.

11. An instrument according to claim 1, wherein said fluid insert is tapered.

12. An instrument for applying a predetermined amount of fluid material to a surface comprising:

a fluid insert for storing fluid material, said fluid insert having a first end, a second end, and a notch arranged between said first end and said second end;

a pump arranged at said first end of said fluid insert, said pump having a pump body and a pump tip; and

an outer casing having a first end and a second end, a tab arranged between said first end and said second end, and an applicator for applying fluid material dispensed into said outer casing, said outer casing constructed and arranged to receive said fluid insert so as to permit movement of said fluid insert within said outer casing between a first position and a second position;

said tab being constructed and arranged to fit within said notch on said fluid insert so as to guide movement of said fluid insert when said fluid insert moves in said outer casing from said first position to said second position;

said fluid insert being in said first position when said pump tip is in a fully extended position, and said fluid insert being in said second position when said pump tip is retracted into said pump body; and

said pump being operative to dispense fluid material into said outer casing when said fluid insert is moved from said first position to said second position.

13. An instrument according to claim 12, wherein said applicator is integrally formed with said outer casing.

14. An instrument according to claim 12, wherein said outer casing further comprises an interior ridge arranged between said first end and said second end of said outer casing;

said fluid insert further comprises a protruding ridge arranged between said first end of said fluid insert and said second end of said fluid insert; and

said interior ridge of said outer casing limiting removal of said fluid insert when said fluid insert is assembled within said outer casing so that said protruding

ridge of said fluid insert is arranged between said interior ridge and said first end.

15. An instrument according to claim 12, further comprising a seal plug having a seal plug ridge for sealing said second end of said fluid insert; said fluid insert further comprising an interior chamber, and a first ridge and a second ridge located within said interior chamber displaced from said second end, and said seal plug ridge of said seal plug being secured between said first and second ridges within said slot of said fluid insert when said seal plug is assembled within said fluid insert.

16. An instrument according to claim 15, wherein said instrument further comprises a movable diaphragm for pushing the fluid material toward said pump in said fluid insert, and said seal plug further having a diaphragm holder for holding said diaphragm.

17. An instrument according to claim 12, further comprising a dispenser cap, said dispenser cap being constructed and arranged to be assembled over said applicator so as to prevent contamination of said fluid material.

18. An instrument according to claim 17, wherein said applicator further comprises an applicator opening, and said dispenser cap further comprises a declogger, said declogger being constructed and arranged to fit within said applicator opening so as to prevent the build-up of dried fluid material.

19. An instrument according to claim 12, wherein said applicator is a brush.

20. An instrument according to claim 12, wherein said applicator is a scrubbing pad.

21. An instrument according to claim 12, wherein said outer casing has a grip for holding said outer casing.

22. An instrument according to claim 12, wherein said fluid insert is tapered.

23. An instrument for applying a predetermined amount of fluid material having a fluid viscosity ranging from 1000 centipoise (cps) - 10,000 cps to a surface comprising:

a fluid insert for storing fluid material, said fluid insert having a first end and a second end, and a notch arranged on said fluid insert displaced from said first end of said fluid insert;

a pump capable of pumping said fluid material having a fluid viscosity ranging from 1000 cps - 10,000 cps arranged at said first end of said fluid insert, said pump having a pump body and a pump tip, said pump operative to dispense fluid material in response to movement of said pump tip; and

an outer casing having a first end and a second end, a tab arranged on the interior thereof, and an applicator for dispensing said fluid from said pump of said fluid insert within said outer casing, and said tab constructed and arranged to fit within said notch so as to guide movement of said fluid insert within said outer casing.

24. An instrument according to claim 23, wherein said applicator is integrally formed with said outer casing.

25. An instrument according to claim 23, wherein said outer casing further comprises an interior ridge arranged between said first end and said second end of said outer casing;

said fluid insert further comprises a protruding ridge arranged between said first end of said fluid insert and said second end of said fluid insert; and

said interior ridge of said outer casing limiting removal of said fluid insert when said fluid insert is assembled within said outer casing so that said protruding ridge of said fluid insert is arranged between said interior ridge and said first end.

26. An instrument according to claim 23, further comprising a seal plug having a seal plug ridge for sealing said second end of said fluid insert;

said fluid insert further comprising an interior chamber, a first ridge and second ridge located within said interior chamber displaced from said second end, said seal plug ridge of said seal plug being secured between said first and second ridges of said fluid insert when said seal plug is assembled within said fluid insert.

27. An instrument according to claim 23, wherein said instrument further comprises a movable diaphragm for pushing the fluid material toward said pump in said fluid insert; and said seal plug further having a diaphragm holder for holding said diaphragm.

28. An instrument according to claim 23, further comprising a dispenser cap, said dispenser cap being constructed and arranged to be assembled over said applicator so as to prevent contamination of said fluid material.

29. An instrument according to claim 28, wherein said applicator further comprises an applicator opening; and said dispenser cap further comprises a declogger, said declogger being constructed and arranged to fit within

said applicator opening so as to prevent the build-up of dried fluid material.

30. An instrument according to claim 23, wherein said applicator is a brush.

31. An instrument according to claim 23, wherein said applicator is a scrubbing pad.

32. An instrument according to claim 23, wherein said outer casing has a grip for holding said outer casing.

33. An instrument according to claim 23, wherein said fluid insert is tapered.

34. A device for dispensing a predetermined amount of fluid material to a surface comprising:

an outer casing having first and second ends, an applicator at said first end, a first ridge arranged on an interior of said outer casing and displaced from said second end, and a second ridge arranged within said interior of said outer casing between said inner ridge and said applicator;

a fluid insert for housing fluid material, said fluid insert having a raised band on the surface thereof, said fluid insert being constructed and arranged to fit within said outer casing so that said raised band is arranged between said first and second ridges, said fluid insert being movable from a first position to a second position within said outer casing to disperse fluid material, said fluid insert being in a first position when said raised band is adjacent to said first ridge of said fluid insert, and said fluid insert being in a second position when said raised band is adjacent to said second ridge of said fluid insert; and

said fluid insert dispensing a predetermined amount of said fluid material contained in said fluid insert through said applicator of said outer casing when said fluid insert moves from said first position to said second position.

35. A device according to claim 34, wherein said applicator is integrally formed with said outer casing.

36. A device according to claim 34, wherein said outer casing further comprises a hollow interior, and a tab arranged within said hollow interior of said outer casing between said first end and said second end; said fluid insert further comprises a notch arranged between said first end of said fluid insert and said second end of said fluid insert; and wherein said tab of said outer casing is constructed and arranged to fit within said notch on said fluid insert so as to guide movement of said fluid insert when said fluid insert moves in said outer casing from said first position to said second position.

37. A device according to claim 34, further comprising a seal plug having a seal plug ridge for sealing said second end of said fluid insert; said fluid insert further comprising an interior chamber, a first ridge and second ridge located within said interior chamber displaced from said second end, and said seal plug ridge of said seal plug being secured between said first and second ridges of said fluid insert when said seal plug is assembled within said fluid insert.

38. A device according to claim 37, wherein said instrument further comprises a movable diaphragm for pushing the fluid material toward said pump in said fluid insert, and said seal plug further having a diaphragm holder for holding said diaphragm.

39. A device according to claim 34, further comprising a dispenser cap, said dispenser cap being constructed and arranged to be assembled over said applicator so as to prevent contamination of said fluid material.

40. A device according to claim 39, wherein said applicator further comprises an applicator opening, and said dispenser cap further comprises a declogger, said declogger being constructed and arranged to fit within said applicator opening so as to prevent the build-up of dried fluid material.

41. A device according to claim 34, wherein said applicator is a brush.

42. A device according to claim 34, wherein said applicator is a scrubbing pad.

43. A device according to claim 34, wherein said outer casing has a grip for holding said outer casing.

44. A device according to claim 34, wherein said fluid insert is tapered.

45. An instrument for dispensing a predetermined amount of fluid material comprising:

an outer casing having an interior chamber, a first tab and a second tab arranged within said interior chamber, and an applicator integrally formed with said outer casing;

a fluid insert arranged and constructed to fit within said outer casing, said fluid insert having a first notch and a second notch, a pump with an internal check valve, and a stop having a first side and a second side, said fluid insert being rotatable within said outer casing between a first position and a second position, said fluid insert being in said second position when said second side

of said stop is adjacent to said second tab and said second notch is displaced from said second tab, and said fluid insert being in said first position when said first tab is aligned with said first notch and said first side of said stop is adjacent to said first tab; and

said dispenser assembly being adapted to dispense a predetermined amount of said fluid material from said fluid insert through said applicator when said fluid insert is in said first position.

46. An instrument according to claim 45, wherein said outer casing further comprises a ridge arranged within said interior chamber between said first end and said second end;

said fluid insert further comprises a protruding ridge arranged between said first end of said fluid insert and said second end of said fluid insert; and

said interior ridge of said outer casing limiting removal of said fluid insert when said fluid insert is assembled within said outer casing so that said protruding ridge of said fluid insert is arranged between said interior ridge and said first end.

47. An instrument according to claim 45, further comprising a seal plug having a seal plug ridge for sealing said second end of said fluid insert;

said fluid insert further including an interior chamber, a first ridge and second ridge located within said interior chamber displaced from said second end, and said seal plug ridge of said seal plug being secured between said first and second ridges of said fluid insert when said seal plug is assembled within said fluid insert.

48. An instrument according to claim 47, wherein said instrument further comprises a movable diaphragm for

pushing the fluid material toward said pump in said fluid insert, and said seal plug further having a diaphragm holder for holding said diaphragm.

49. An instrument according to claim 45, further comprising a dispenser cap, said dispenser cap being constructed and arranged to be assembled over said applicator so as to prevent contamination of said fluid material.

50. An instrument according to claim 45, wherein said applicator further comprises an applicator opening; and said dispenser cap further comprises a declogger, said declogger being constructed and arranged to fit within said applicator opening so as to prevent the build-up of dried fluid material.

51. An instrument according to claim 45, wherein said applicator is a brush.

52. An instrument according to claim 45, wherein said applicator is a scrubbing pad.

53. An instrument according to claim 45, wherein said outer casing has a grip for holding said outer casing.

54. An instrument according to claim 45, wherein said fluid insert is tapered.

55. A dispenser assembly for dispensing a predetermined amount of fluid material comprising:

a fluid insert having a body including a first end and a second end, a hollow chamber for storing a fluid material, a seal cap mounted to said first end for sealing said fluid insert, a pump connected to said second end for dispensing a predetermined amount of fluid material, a notch on said body displaced from said second end, and a protruding ridge displaced from said first end; and

an outer casing having an interior chamber for receiving said fluid insert, said outer casing having a first end and a second end, an applicator arranged at said first end for applying said fluid material dispensed from said pump of said fluid insert to a surface, a tab arranged within said interior chamber of said outer casing, said tab constructed and arranged to fit within said notch so as to guide movement of said fluid insert within said outer casing, and a ridge arranged within said interior chamber of said outer casing, said ridge being operative to restrict removal of said fluid insert when said fluid insert is assembled within said interior chamber.

56. A dispenser assembly according to claim 55, wherein said notch of said fluid insert is a first notch, and wherein said fluid insert further comprises a stop having a first side said tab on said outer casing is a first tab, and wherein and a second side, and a second notch;

wherein said outer casing further comprises a second tab; and

wherein said fluid insert is rotatable within said outer casing between a pumping position and a non-pumping position, said fluid insert being in a non-pumping position when said second side of said stop is adjacent to said second tab and said second notch is displaced from said second tab, and said fluid insert being in said first position when said first tab is aligned with said first notch and said and said first side of said stop is adjacent to said first tab.

57. A dispenser assembly according to claim 55, further comprising a dispenser cap, said dispenser cap

being constructed and arranged to be assembled over said applicator so as to prevent contamination of said fluid material.

58. A dispenser assembly according to claim 57, wherein said applicator further comprises an applicator opening, and said dispenser cap further comprises a declogger, said declogger being constructed and arranged to fit within said applicator opening so as to prevent the build-up of dried fluid material.

59. A dispenser assembly according to claim 55, wherein said applicator is a brush.

60. A dispenser assembly according to claim 55, wherein said applicator is a scrubbing pad.

61. A dispenser assembly according to claim 55, wherein said outer casing has a grip for holding said outer casing.

62. A method of filling a dispenser assembly using a high speed filling apparatus comprising:

providing a partially pre-assembled dispenser assembly having an end cap, an outer casing, and an inner fluid receiving body, said outer casing having a first end and a second end, and an applicator at said first end, said inner fluid receiving body having a first end and a second end, said inner fluid receiving body further including a pump arranged at said first end of said inner fluid receiving body and an opening arranged at said second end of said inner fluid receiving body, and said inner fluid receiving body being pre-assembled in said outer casing so that said inner fluid receiving body closes said second end of said outer casing, and said end cap being arranged over said applicator of said outer casing;

placing said pre-assembled dispenser assembly directly onto a filling apparatus;

filling said inner fluid receiving body with a fluid material through said opening of said inner fluid receiving body; and

sealing said inner fluid receiving body of said partially pre-assembled dispenser assembly with a seal plug so as to provide a fully assembled and filled dispenser assembly.

63. A method of filling a dispenser assembly according to claim 62, further comprising packaging said fully assembled and filled dispenser assembly.